

**Amendment/Reply**

Applicant: Martin Brox

Serial No.: 10/585,151

Filed: October 16, 2007

Docket No.: Q601.131.101/2003P53957US

Title: VOLTAGE REGULATION SYSTEM

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**REMARKS**

The following remarks are made in response to the Final Office Action mailed February 18, 2010. Claims 1-9 have been previously cancelled. Claims 10-29 were rejected. With this Response, claims 10, 17-19, 21, 28, and 29 have been amended, claims 16 and 27 have been cancelled without prejudice, and claims 30 and 31 have been added. Claims 10-15, 17-26, and 28-31 remain pending in the application and are presented for reconsideration and allowance.

**Claim Rejections under 35 U.S.C. § 102**

The Examiner rejected claims 10-29 under 35 U.S.C. § 102(b) as being anticipated by Matsuda et al., U.S. Patent No. 5,861,771 ("Matsuda").

Independent claim 1 has been amended to include the limitations recited by dependent claim 16, and claim 16 has been cancelled. Independent claim 21 has been amended to include the limitations recited by dependent claim 27, and claim 27 has been cancelled. Applicant submits that Matsuda fails to teach or suggest the limitations recited by amended independent claims 10 and 21 including **a device for activating and/or deactivating the further device to an activated and/or deactivated state.**

In the rejection of claims 16 and 27, the Examiner submits that resistors R3 and R4 of Matsuda disclose a device for activating and/or deactivating the further device (7 and 51) to an activated and/or deactivated state (activate/deactivate output circuit 6). (Final Office Action, pages 4 and 6).

Matsuda discloses that the current flowing in the output transistor 63 flows in a series circuit of resistors R3 and R4. The internal power supply voltage Vcc2 is obtained at an end of the series circuit (an end of the resistor R3). A voltage obtained at a connection node at which the resistors R3 and R4 are connected in series functions as the reference voltage Vf to be fed back to the operational amplifier 51. The internal power supply voltage Vcc2 can be maintained at a fixed level. If the internal power supply voltage Vcc2 is increased due to a certain factor, the fed-back voltage Vf is increased. The increased fed-back voltage Vf is applied to the inverting input terminal of the operational amplifier 51, which reduces the control voltage Vc. The

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reduced control voltage  $V_c$  reduces the drain current of the input transistor 61. The reduced drain current reduces the drain current of the output transistor 63. Since the current flowing in the resistors R3 and R4 is reduced, the internal power supply voltage  $V_{cc2}$  is reduced. Hence, an increase in the power supply voltage  $V_{cc2}$  can be cancelled. (Col. 6, line 50 – col. 7, line 2; and Fig 4).

Resistors R3 and R4 of Matsuda do not *activate and/or deactivate* output circuit 6 or input transistor 61. Resistors R3 and R4 of Matsuda are merely used to provide a feedback signal to maintain  $V_{cc2}$  at a fixed level. The feedback signal  $V_f$  does not activate and/or deactivate any circuit, let alone voltage step-down circuit 7 and operational amplifier 51 as submitted by the Examiner.

In view of the above, Applicant submits that the above rejection of independent claims 10 and 21 under 35 U.S.C. § 102(b) should be withdrawn. Dependent claims 11-15, 17, 18, 22-26, 28, and 29 further define patentably distinct independent claim 10 or 21. Accordingly, Applicant believes that these dependent claims are also allowable over the cited reference. Allowance of claims 10-15, 17, 18, 21-26, 28, and 29 is respectfully requested.

For similar reasons as discussed above with reference to independent claims 10 and 21 and for additional reasons discussed below, Applicant submits that Matsuda also fails to teach or suggest the limitations recited by amended independent claim 19 including **changing the essentially constant voltage to provide the second voltage in a first state and changing the greater of the essentially constant voltage and the variable further voltage to provide the second voltage in a second state**.

Matsuda discloses a regulator circuit having a single state for providing and maintaining the internal power supply voltage  $V_{cc2}$  at a fixed level. The Examiner submits that  $V_{ref}$  of Matsuda discloses the *essentially constant voltage* recited by claim 19 and that  $V_r$  of Matsuda discloses the *variable further voltage* recited by claim 19. (Final Office Action, page 2).

Matsuda discloses that the output of control circuit 5 includes an operational amplifier 51, which compares the reference voltage  $V_{ref}$  with the fed-back voltage  $V_f$  from the output circuit 6, and outputs the control signal  $V_c$  depending on the comparing result. (Col. 6, lines 34-39).

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The output circuit 6 is driven by the control signal  $V_c$  to provide the internal power supply voltage  $V_{cc2}$ . (Col. 6, lines 43-56). The reference voltage generating circuit 4 and the output voltage control circuit 5 are driven by the step-down voltage  $V_r$ . (Col. 5, lines 4-6).

Matsuda fails to disclose changing the greater of  $V_{ref}$  and  $V_r$  to provide  $V_{cc2}$  in a second state. In contrast,  $V_{cc2}$  of Matsuda is always derived from  $V_{ref}$  with feedback from  $V_r$  to maintain  $V_{cc2}$  at a fixed level.  $V_r$  of Matsuda is merely used to drive circuits 4 and 5 so that circuits 4 and 5 can be formed by reduced-size elements having a reduced breakdown voltage to reduce the area of the regulator circuit on the chip. (Col. 5, lines 22-26).

In view of the above, Applicant submits that the above rejection of independent claim 19 under 35 U.S.C. § 102(b) should be withdrawn. Dependent claim 20 further defines patentably distinct independent claim 19. Accordingly, Applicant believes that this dependent claim is also allowable over the cited reference. Allowance of claims 19 and 20 is respectfully requested.

**Added Claims**

Claims 30 and 31 have been added. No new matter has been added. Applicant believes that added claims 30 and 31 are allowable over the cited reference. Allowance of claims 30 and 31 is respectfully requested.

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**CONCLUSION**

In view of the above, Applicant respectfully submits that pending claims 10-15, 17-26, and 28-31 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 10-15, 17-26, and 28-31 is respectfully requested.

No fees are required under 37 C.F.R. 1.16(h)(i). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 50-0471.

Please consider this a Petition for Extension of Time for a sufficient number of months to enter these papers, if appropriate. At any time during the pendency of this application, please charge any additional fees or credit overpayment to Deposit Account No. 50-0471.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment/Reply should be directed to Steven E. Dicke at Telephone No. (612) 573-2002, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

**Dicke, Billig & Czaja**  
Fifth Street Towers, Suite 2250  
100 South Fifth Street  
Minneapolis, MN 55402

Respectfully submitted,

Martin Brox,

By his attorneys,

DICKE, BILLIG & CZAJA, PLLC  
Fifth Street Towers, Suite 2250  
100 South Fifth Street  
Minneapolis, MN 55402  
Telephone: (612) 573-2000  
Facsimile: (612) 573-2005

Date: April 19, 2010  
SED:kmh

/Steven E. Dicke/  
Steven E. Dicke  
Reg. No. 38,431